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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,634	06/04/2002	Larry Rushefsky	IO-1013US	8725
24923	7590	06/14/2005	EXAMINER	
PAUL S MADAN MADAN, MOSSMAN & SRIRAM, PC 2603 AUGUSTA, SUITE 700 HOUSTON, TX 77057-1130			BELLAMY, TAMIKO D	
			ART UNIT	PAPER NUMBER
			2856	

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/936,634

Applicant(s)

RUSHEFSKY ET AL.

Examiner

Tamiko D. Bellamy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 9-45 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-15, 17-23, 26-30, 35, 36, 44 and 45 is/are rejected.
- 7) ☒ Claim(s) 16, 24, 25, 31-34, 37, 42 and 43 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/8/04.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 9-15, 36, 38, 40, 44, and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Silvermint (5,012,316).

Re claims 9, 12, 36, 44, as depicted in figs 3 and 6, Silvermint discloses a housing (e.g. multi-axial transducer 260), and a sensor module (202) having a plurality of sensor packages (e.g., transducers 300A, 300B, 300C) coupled to a substrate (100B) having slots for receiving the sensor packages (e.g., transducers 300A, 300B, 300C)) (Col. 3, lines 5-49). Silvermint discloses a multi-axial transducer assembly (260) mounted on an integrated circuit carrier (262) that is equivalent a control unit for controlling the sensor (Col. 4, lines 54-61). As depicted in fig. 3, Silvermint discloses that each sensor module has an axis positioned in a different spatial direction (Col. 3, lines 41-45).

Re claims 10, 11, and 38, Silvermint discloses that the transducers may be accelerometers of the type sold by IC sensors, which is equivalent to micro-machined accelerometers.

Re claims 13 and 14, as depicted in fig. 3, Silvermint discloses a sensor module (202) is selected from a group consisting of a three-dimensional circuit board.

Re claim 15, as depicted in figs. 3 and 6, Silvermint discloses the housing (260) includes a cavity for receiving a sensor/transducer (300A). Silvermint discloses a bottom surface of the cavity, a bottom exterior surface, a top exterior surface, and one or side surfaces.

Re claim 40, Silvermint discloses that substrate module (100) includes tracks (2,3) for carrying first and second signals to other electronic devices (Col. 2, lines 53-58). As depicted in fig. 6, Silvermint discloses the controller (e.g., integrated circuit chip 262) is mounted to the bottom exterior of the housing (260) (Col. 4, lines 54-60). Silvermint discloses that the controller (e.g., integrated circuit chip 262) contains pins (264) for interfacing with external electronics. Therefore, Silvermint inherently includes wire bonds for coupling the controller to housing.

Re claim 45, as depicted in fig. 14, as depicted in fig. 3, Silvermint discloses the sensor packages (e.g. 300A, 300B, 300C) are coupled to each other via substrate (100B).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 17, 19-22, 26-30, and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silvermint (5,012,316) in view of Matsumoto et al. (6,305,223).

Re claims 17, 26, 27, and 41 as depicted in figs. 3 and 6, Silvermint discloses a housing (260) having a cavity containing sensors/transducers (300A, 300B, 300C), which are mounted to the surfaces of the housing (260). Silvermint does not specifically disclose resilient couplings for coupling the sensor to the package. As depicted in fig. 5, Matsumoto et al. discloses a resilient coupling (e.g., solder 815) for coupling the sensor to the package. Therefore, to modify Silvermint by employing resilient couplings would have been obvious to one of ordinary skill in the art at the time of the invention since Matsumoto et al. teaches an accelerometer having these design characteristics. The skilled artisan would be motivated to combine the teachings of Silvermint and Matsumoto et al. since Silvermint states that his invention is applicable to an accelerometer of type sold by IC Sensors and Matsumoto et al. is directed to an accelerometer.

Re claims 19, 20, and 22, as depicted in figs. 3 and 6, Silvermint discloses a housing (260) having a cavity containing sensors/transducers (300A, 300B, 300C), which are mounted to the surfaces of the housing (260). Silvermint does not specifically disclose resilient couplings coupled to the bottom surface of the cavity. As depicted in fig. 13, Matsumoto et al. discloses the housing cavity includes resilient coupling (1505) coupled to the bottom surface of the cavity, and positioned at one or more ends of the bottom surface of the cavity. Therefore, to modify Silvermint by employing resilient couplings would have been obvious to one of ordinary skill in the art at the time of the invention since Matsumoto et al. teaches an accelerometer having these design characteristics. The skilled artisan would be motivated to combine the teachings of

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Silvermint and Matsumoto et al. since Silvermint states that his invention is applicable to an accelerometer of type sold by IC Sensors and Matsumoto et al. is directed to accelerometer.

Re claims 21, 23, 29 as depicted in figs. 3 and 6, Silvermint discloses a housing (260) having a cavity containing sensors/transducers (300A, 300B, 300C), which are mounted to the surfaces of the housing (260). Silvermint does not specifically disclose the resilient couplings at the approximate center of the bottom surface of the cavity of the housing. As depicted in fig. 13, Matsumoto et al. discloses the housing cavity includes resilient coupling (1505) coupled to the bottom surface of the cavity, and positioned at one or more ends of the bottom surface of the cavity. Matsumoto et al. does not specifically disclose the resilient couplings positioned at the approximate center of the bottom surface of the cavity of the housing. However, the placement of an element is a design consideration clearly in the preview of one having ordinary skill in the art. Therefore, to employ the combination of Silvermint of Matsumoto et al. on a resilient couplings positioned at the approximate center of the bottom surface on would have been obvious to one of ordinary skill in the art at the time of the invention since Matsumoto et al. explicitly teaches its use on a acceleration sensor with a housing that makes use of a resilient coupling. The skilled artisan would be motivated to combine the teachings of Silvermint and Matsumoto et al. since Silvermint states that his invention is applicable to an accelerometer of type sold by IC Sensors and Matsumoto et al. is directed to an accelerometer.

Re claim 28, as depicted in figs. 3 and 6, Silvermint discloses a housing (260) having a cavity containing sensors/transducers (300A, 300B, 300C), which are mounted to the surfaces of the housing (260). Silvermint does not specifically disclose one or more passive region wherein one or more bond pads located in the passive regions. As depicted in figs. 5 and 13, Matsumoto et al. discloses a passive and active region including bond pads (e.g. electrical contact 804). Therefore, to modify Silvermint by employing one or more passive regions would have been obvious to one of ordinary skill in the art at the time of the invention since Matsumoto et al. teaches an accelerometer having these design characteristics. The skilled artisan would be motivated to combine the teachings of Silvermint and Matsumoto et al. since Silvermint states that his invention is applicable to an accelerometer of type sold by IC Sensors and Matsumoto et al. is directed to accelerometer.

Re claim 30, as depicted in figs. 3 and 6, Silvermint discloses a housing (260) having a cavity containing sensors/transducers (300A, 300B, 300C), which are mounted to the surfaces of the housing (260). Silvermint does not specifically disclose housing including wire bonds for electrically coupling the surfaces of the sensor to the surfaces of the housing. As depicted in fig. 13, Matsumoto et al. discloses wire bonds electrically coupling the sensor to the housing. Therefore, to modify Silvermint by employing wire bonds would have been obvious to one of ordinary skill in the art at the time of the invention since Matsumoto et al. teaches an accelerometer having these design characteristics. The skilled artisan would be motivated to combine the teachings of Silvermint and Matsumoto et al. since Silvermint states that his invention is applicable to

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an accelerometer of type sold by IC Sensors and Matsumoto et al. is directed to accelerometer.

***Allowable Subject Matter***

5. Claims 16, 24, 25, 31-34, 37 42, and 43 are objected to as being dependent upon a rejected base claim 9, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

6. Applicant's arguments with respect to claim 9-45 have been considered but are moot in view of the new ground(s) of rejection. It is the Examiners position that 9-15, 17-23, 26-30, 35, 36, 44, and 45 are not patentable in view of the newly applied art of Silvermint (5,012,316), and Silvermint (5,012,316) in view of Matsumoto et al. (6,305,223).

***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamiko D. Bellamy whose telephone number is (571) 272-2190. The examiner can normally be reached on Monday - Friday 7:30 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

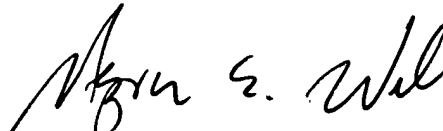


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tamiko Bellamy

T.B.  
June 13, 2005

A handwritten signature in black ink, appearing to read "Hezron S. Williams", with a long, sweeping horizontal line extending to the right.

HEZRON WILLIAMS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800